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TITLE: SEMICONDUCTOR DEVICE AND MANUFACTURE THEREOF

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ABSTRACT:

PROBLEM TO BE SOLVED: To selectively grow W only on an opening part provided in an insulating film of a wiring, especially on a Cu wiring so as to improve reliability by terminating the surface of a coating film with an element of a binding energy higher than average binding energy with an element constituting an insulating film so as to selectively grow a metal film inside a connection hole.

SOLUTION: A resist pattern is formed on a carbon layer 8 and a via hole 10 for connecting to a Cu wiring 4 in the regions of an insulating film 6 and a carbon layer 8 on a Cu wiring 4 having the above as a mask. Then, after removing a resist pattern a natural oxide film on the surface of the exposed Cu wiring 4 is removed. Next, a dangling bond on the surface of the carbon layer 8 generated at the time of removing the oxide film is terminated by fluorine (F). Next, a via (W plug) 12 is made to selectively grow and later, the carbon layer 8 is removed so as to finish the via 12 for a multilayered wiring.

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